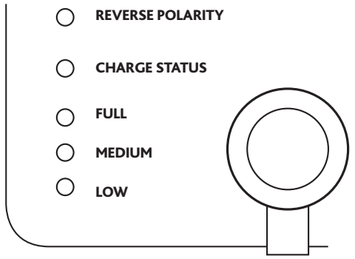
5. LED DISPLAY

The LED indicator lights on the front of the jump starter are designed to provide the operator with an indication of pack capacity and charging status.



5.1 Reverse Polarity

If the battery clips are connected with incorrect polarity then the indicator will illuminate on the pack and a warning buzzer will sound. If this happens, turn off the pack and reverse the battery clips before proceeding.

= REVERSE POLARITY

5.2 Charge Status

= CHARGING

Battery Charging

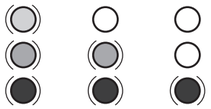
When the pack is connected to the mains charger or in-vehicle charging lead, this indicator will illuminate to confirm the internal battery is being charged correctly.
Note:- When pack is off, push red keyswitch to illuminate the display.

Alternator check

This indicator can also be used to check if a vehicle alternator is charging correctly.

1. Ensure isolator switch is turned off, then connect battery clips to vehicle battery.
2. Start the vehicle and gently increase the engine revs.
3. The charge status LED will illuminate when the alternator output voltage is sufficient to recharge the battery.

5.3 Battery Status



Power Pack Battery

With the isolator switch turned on, these indicators show the charge condition of the power pack battery.
When only the 'low' indicator illuminates, the pack must be re-charged.

Vehicle Battery

With the isolator turned off and the leads connected to the vehicle battery, the battery status indicators will show the charge condition of the vehicle battery.

6. SPECIFICATIONS

Rated Output Voltage	12V DC
Rated Input Voltage	230V/50Hz AC
Peak Amps	2400A
Cranking Amps (pulse)	1100A
Cold Cranking Amps	370A
Battery type	1 x 26Ah
Battery Shelf Life	24 months (from fully charged)
12V Petrol Engines	up to 7 litres
12V Diesel Engines	up to 3.5 litres
Charge time from flat	6.5 hours to 95%
Charger Specification	4amp, 12V, 3-Stage
Weight	12Kg

7. SPARE PARTS

Part No.	Description
RPPA4	4 Amp Battery Charger
RPPLSB	2 Metre lead set with battery clamps
RPPIK1	Red Isolator Key

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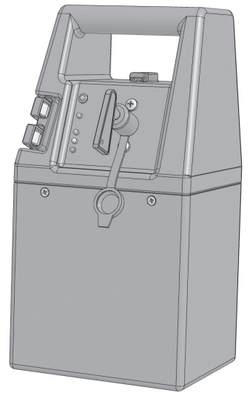
L381

TradeStart 2400

Professional 12V, 2400A Power Pack

RPP2400



User Manual

www.ringautomotive.co.uk

RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE

1. SAFETY INSTRUCTIONS

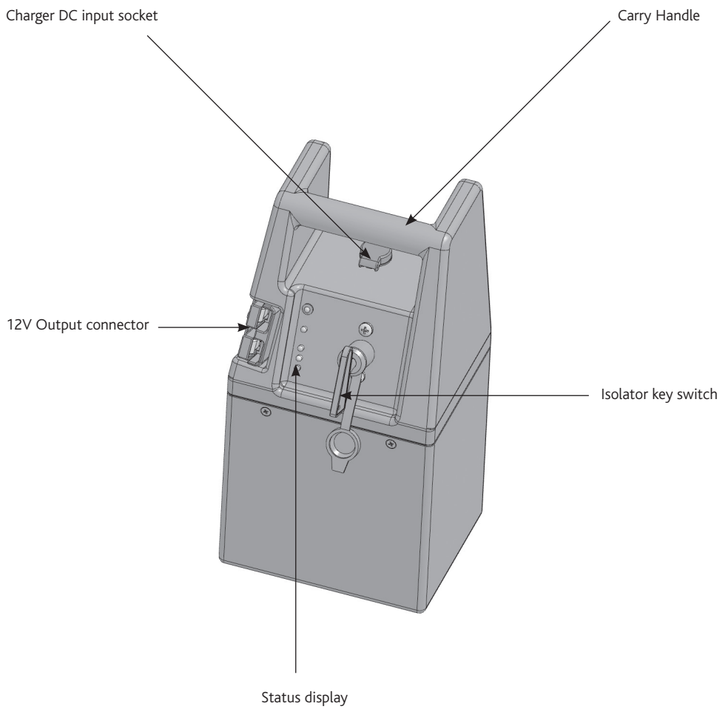
This 12 volt high energy portable power source uses an ultra high discharge sealed battery, with characteristics designed to deliver the very high cranking currents required to start the wide variety of petrol and diesel engines used in cars and light vans. The sealed battery contains no free liquid and requires no maintenance. It can be operated in any position.

Extreme caution must be observed at all times to ensure that the crocodile clips do not short otherwise very severe arcing can occur resulting in heating and damage. The following instructions are designed to help the operator obtain the best use from this equipment which will provide engine starts over many years, if used correctly.

ALWAYS OBSERVE THE FOLLOWING:-

- Do not short circuit this equipment
- Always check polarity when connecting the unit
- Always remove the red isolator key from the key switch when unit is not in use
- To maximise performance ensure all vehicle accessories are switched off before turning on the red isolator switch
- With diesel engines, wait for pre-heat light on the vehicle to extinguish before cranking
- Only use battery charger provided with the pack
- NEVER allow the Power pack to fully discharge its battery (battery 'deep discharge' failure can occur)
- ALWAYS secure crocodile clips to the vehicle battery BEFORE turning on the red isolator switch

2. PRODUCT OVERVIEW



3. OPERATING INSTRUCTIONS

1. Ensure that red isolator key is removed from isolator switch.
2. Insert the crocodile lead set to the connector on the front of the pack.
3. Connect both the crocodile clips to the battery as follows:-

   red clip = positive(+) battery terminal

   black clip = negative(-) battery terminal

If the leads are connected incorrectly the battery status indicators will not illuminate and the reverse polarity warning buzzer will sound. **Note:-** indicators and buzzer will not operate if the vehicle battery is totally flat. In this situation check carefully that the leads are connected correctly before turning on the power.

4. Insert red isolator key and turn clockwise to activate pack and establish power to vehicle. On diesel engines wait for the pre-heaters on the vehicle to operate.
5. Engage vehicle starter and allow starter to crank engine as normal.
6. Do not crank engine for longer than 15 seconds. If engine has not started:- turn off pack, wait for 2 minutes for pack to recover then repeat sequence again.
7. Once vehicle has started allow it to run for several minutes to partially restore battery.
8. Switch off key switch and remove red isolator key.
9. Disconnect power pack from vehicle battery by removing the negative clip, followed by the positive clip.

Note:- Although this unit is fitted with an anti surge suppressor it will not protect the alternator if the vehicle battery is open circuit and switching off the power pack may cause damage where the voltage regulator has failed and the engine is running. If in any doubt switch off the engine before switching off the power pack.

4. BATTERY RECHARGING

The power pack is supplied with an external 3-stage charging system, which is designed to allow the power pack to remain on permanent charge. The unit can also be recharged using the In-vehicle charging lead.

4.1 Mains Charging

1. Ensure isolator is turned off (leave red keyswitch in place).
2. Ensure mains supply is switched off, then connect charger lead to power pack.
3. Switch on mains supply to charger.
   - Charge status indicator on charger should illuminate red (see charger label)
   - During charging, push red keyswitch and confirm Charge Status indicator on the pack illuminates green
4. When charging is complete, indicator on charger will change from red to green. Approximate time from discharge to full battery recovery can be up to 12 hours.

4.2 In-vehicle charging

1. Ensure isolator is turned off (leave red keyswitch in place)
2. With the vehicle engine switched off, connect in-vehicle charger lead to power pack and connect other end to vehicle 12V DC accessory socket.
3. Switch on vehicle ignition and pack will begin charging from the vehicle alternator.
   - During charging, push red keyswitch and confirm Charge Status indicator on the pack illuminates green.

Pack recovery from heavy use is dependent on the engine running time.

If the vehicle DC socket is not ignition controlled, it is essential that the charge lead is removed from the socket whenever the vehicle is left unattended, to avoid possible battery discharge.